Hillgrove Road Bridge
(Strout Road Bridge)
Spanning The Little Miami Scenic River at
County Road 38
Morrow Vicinity
Warren County
Ohio

HAER No. OH-37

DRAWINGS

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
MID-ATLANTIC REGION NATIONAL PARK SERVICE
DEPARTMENT OF THE INTERIOR
PHILADELPHIA, PENNSYLVANIA 19106

HISTORIC AMERICAN ENGINEERING RECORD

MILLGROVE ROAD BRIDGE
(Strout Road Bridge)

HAER No. OH-37

LOCATION:	Spanning the Little Miami Scenic River carrying Mason-Morrow-Millgrove Road (County Road 38), .04 mile east of Gilmore Road (Township Road 92), Salem and Washington Townships, Warren County, Ohio. UTM: 16.750440.4362620 Quad: Oregonia, Ohio
DATE OF CONSTRUCTION:	1892. New deck and floor joists 1965-1966.
PRESENT OWNER:	Warren County Commissioners 320 East Silver Street Lebanon, Ohio 45036
MAINTENANCE BY:	Warren County Engineer 105 Markey Road Lebanon, Ohio 45036
PRESENT USE:	Vehicular Bridge
SIGNIFICANCE:	Millgrove Road Bridge is one of ten Baltimore through trusses remaining in Ohio. It was fabricated and erected by the Toledo Bridge Company of Toledo, Ohio.
HISTORIAN:	William Thomas Temple, November 1984

The Strout Road Bridge (also known as the Millgrove Road Bridge) over the Little Miami Scenic River was built by the Toledo Bridge Company in 1892. [1] The structure was built during the so called "Good Roads Movement," led by various cyclists groups with public attention focused on the need for improved highways, asserting that "the beginning of good roads should be good bridges." [2] This Baltimore Through Truss structure is one of ten such bridges in the State of Ohio and one of two in Southwest Ohio.

The bridge was constructed as the result of a petition to the County Commissioners in March 1892 for "the erection of a bridge over the Little Miami River at Millgrove." In April 1892 letters were received from Mary J. Wass and Zimri O. Worley "agreeing to give land for the making of fills and building of abutments for proposed bridge accross the Little Miami River at Millgrove so long as the same is used as a public highway." In June 1892 a contract for building the stone abutments was awarded to E. H. Hall at $1.85 per perch ($2,000.00 performance bond given.) A contract for furnishing stone to side track was awarded to Boots, Brickett and Conklin at $3.20 per perch. The contract for erection of the iron superstructure was awarded July 26, 1892 to the Toledo Bridge Company which submitted a bid of $4,600.00 (a $5,000.00 performance bond was given.) [3] The Toledo Bridge Company,known as the Smith Bridge Company before 1890, was absorbed by the American Bridge Division of U. S. Steel Corporation around 1900. [4]

In the early 1900's it was common in Warren County that property owners were contracted to do routine maintenance on the roads and bridges in their area. Zimri O. Worley was one of the adjacent property owners that performed various work on the approaches to the bridge. On April 8, 1907, he furnished fill and material to repair one of the approaches washed out by the March 1907 flood. He filed a bill for $29.68. The Oregonia Bridge Company drove 16 piles 16 feet long on the west abutment on December 28, 1908 for the protection of the bridge. The total cost was $192.00. On March 15, 1909 they cleaned and painted the floor beams and steel joists and put on new creosoted nailers at a cost of $197.95. On September 26, 1910 Claude Leever cleaned and painted the Millgrove River Bridge for $114.00. The county furnished the paint. [5] [6]

From 1910 to 1965 there are no official records reporting maintenance to the Strout Road Bridge since minor routine maintenance was performed by county forces. However, it is thought that the Strout Road Bridge may have been painted in 1939 and 1962. On December 7, 1965 the County Commissioners gave the County Engineer permission to "repair the Strout Road Bridge by Force Account" by replacing the deck at an estimated cost of $19,800 for labor, equipment and materials. [7] The existing wood deck was replaced with 7 gage 6" x 2" steel corrugated deck topped with three inches of asphalt concrete. The existing steel I-beam floor joists were replaced with new 12" wide flange beams. [8] It is not known whether or not the existing floor beams are the original ones. The county bridge crew replaced the lower lateral bracing in 1981 with used steel beams.

The bridge consists of a through Baltimore Truss span 224 feet long center to center of bearing with an overall length of 226 feet.The bridge was designed to carry a roadway width of 16 feet with a minimum vertical clearance of 14 feet 7 inches.

The bridge consists of a total of eight major truss panels 28 feet long with each being divided into two equal smaller panels 14 feet long. There are fifteen 15 inch I-beam floor beams spaced at 14 feet supporting six lines of 12" wide flange beam floor joists spaced at 3 feet. The floor joists carry a 7 gage corruagated steel deck topped with 3 inches of asphalt concrete. The bridge has lattice railing, lattice portal struts with rectangular name plate, and curved corner braces. The top chords, end posts, and verticals are all rivoted together with lacing bars. The lower chords and diagonals are various sized bars.

The substructure consists of two hand laid stone abutments, The west abutment is 21 feet 6 inches wide at the top with a 16 feet 4 inches long south wingwall and 17 feet 10 inches long north wingwall. The west abutment averages about 4 feet thick with the south wingwall being also 4 feet thick and the north wingwall being 3 feet thick. The west abutment is about 14 feet 6 inches high at its center. The east abutment is 22 feet wide at the top with a 13 feet 6 inches long south wingwall and 20 feet long north wingwall. The east abutment averages 3 feet 3 inches thick with the north wingwall bieng 3 feet 6 inches thick and south wingwall being 3 feet thick. The east abutment is 11 feet 6 inches high at its center. (See pages 5-10)

The Strout Road Bridge has deteriorated rapidly in recent years. Some vertical members and pin connections are in poor condition due to rust. Nearly every floor beam has rusted completely through at each end. The load limit was reduced from ten tons to four tons in 1981 when the structure was analyzed by Franklin Consultants, Inc. of Columbus, Ohio. The load limit was further reduced to three tons early in 1984. Any further deterioration could result in the closing of the bridge to traffic, which would necessitate inconvenient detours to motorists.

It is hoped that a contract can be let early in 1985 for the removal of the Strout Road Bridge. A new three span prestressed concrete box beam bridge 20 feet wide will replace the old structure. The cost of the new structure is estimated to be $330,000.00 based on 1985 dollars. Construction of the new bridge should be completed late in 1985. The Warren County Engineer's office will fund 100% of the cost. The new bridge will accommodate all legal highway loads (40 tons).

FOOTNOTES

[1] Warren County Commissioner's Journal, Volume 16, Page 637. All Comissioner's Journals are located at 320 East Silver Street, Lebanon, Ohio 45036.

[2] Ohio Historic Preservation Office, Page 93 of information furnished, title unknown.

[3] Warren County Commissioner's Journal, Volume 16, Pages 583, 597, 621;623, 632-634, and 637.

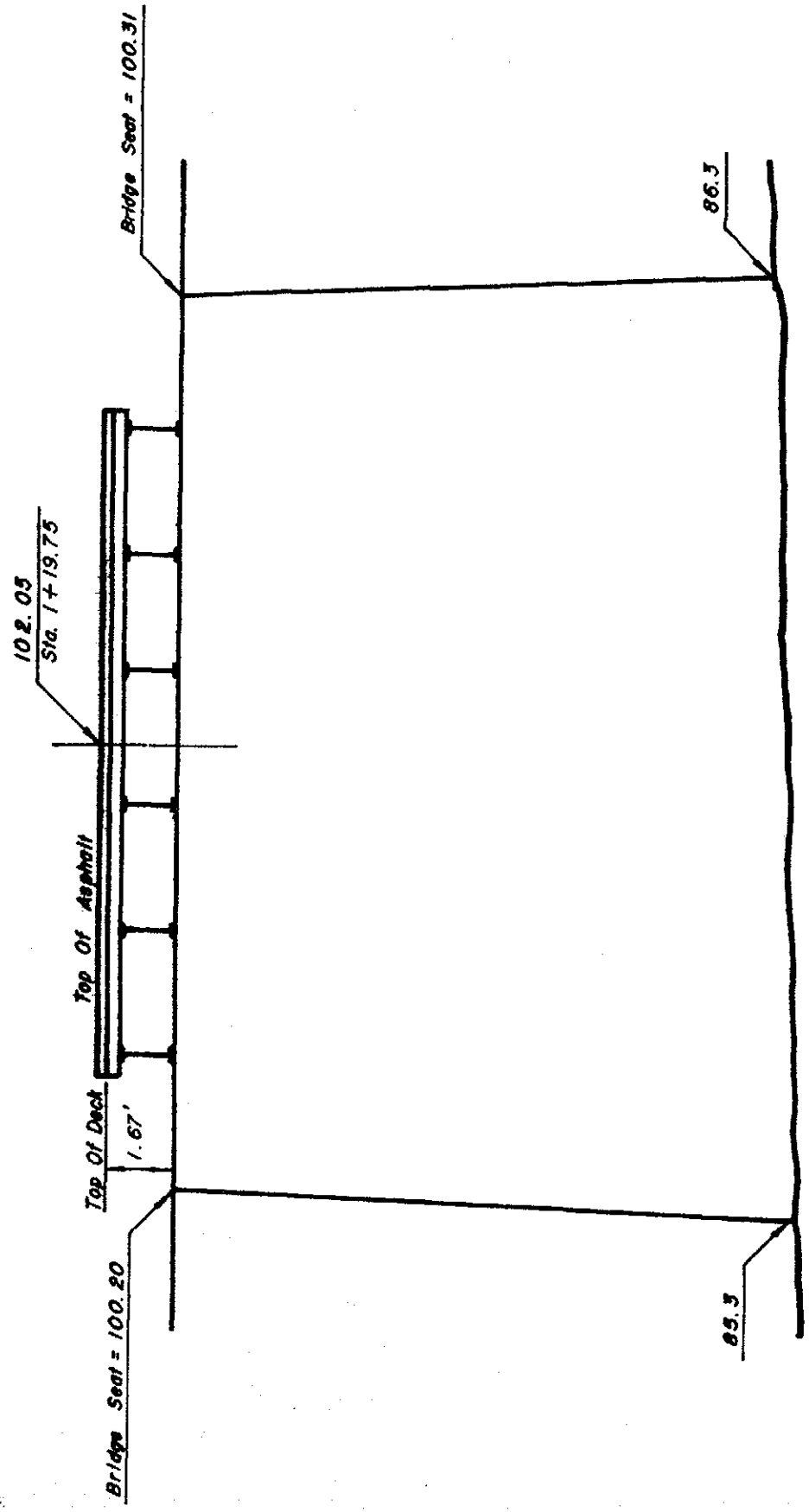
[4] Ohio Historic Preservation Office, Page 312 of information furnished, title unknown.

[5] Engineer's Record of Contracts, Book No. 3, Table of Contents, Warren County Engineer's Office, 105 Markey Road, Lebanon, Ohio 45036

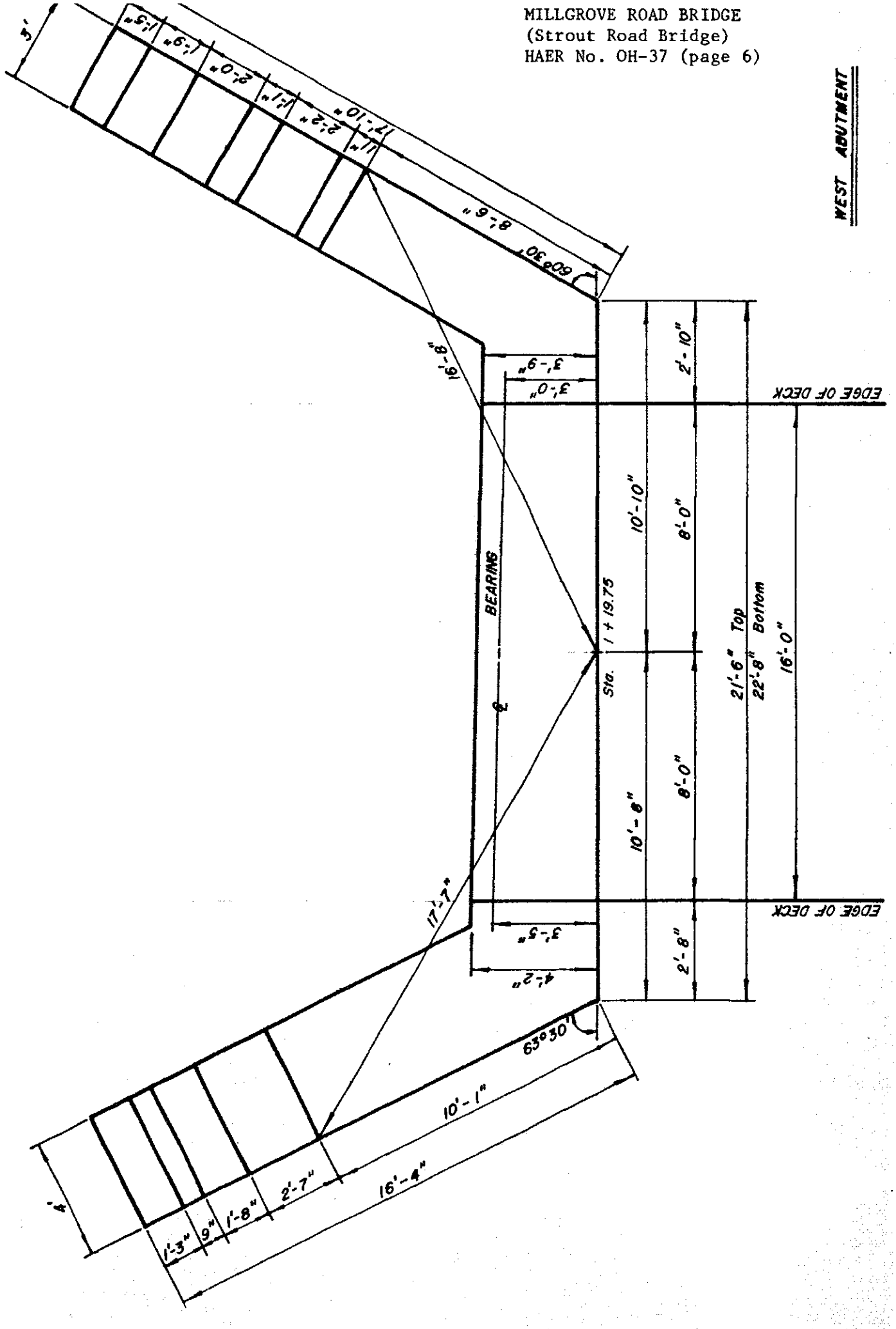
[6] Warren County Commissioner's Journal, Volume 22, Pages, 120, 511, and 552, Volume 23, Page 245.

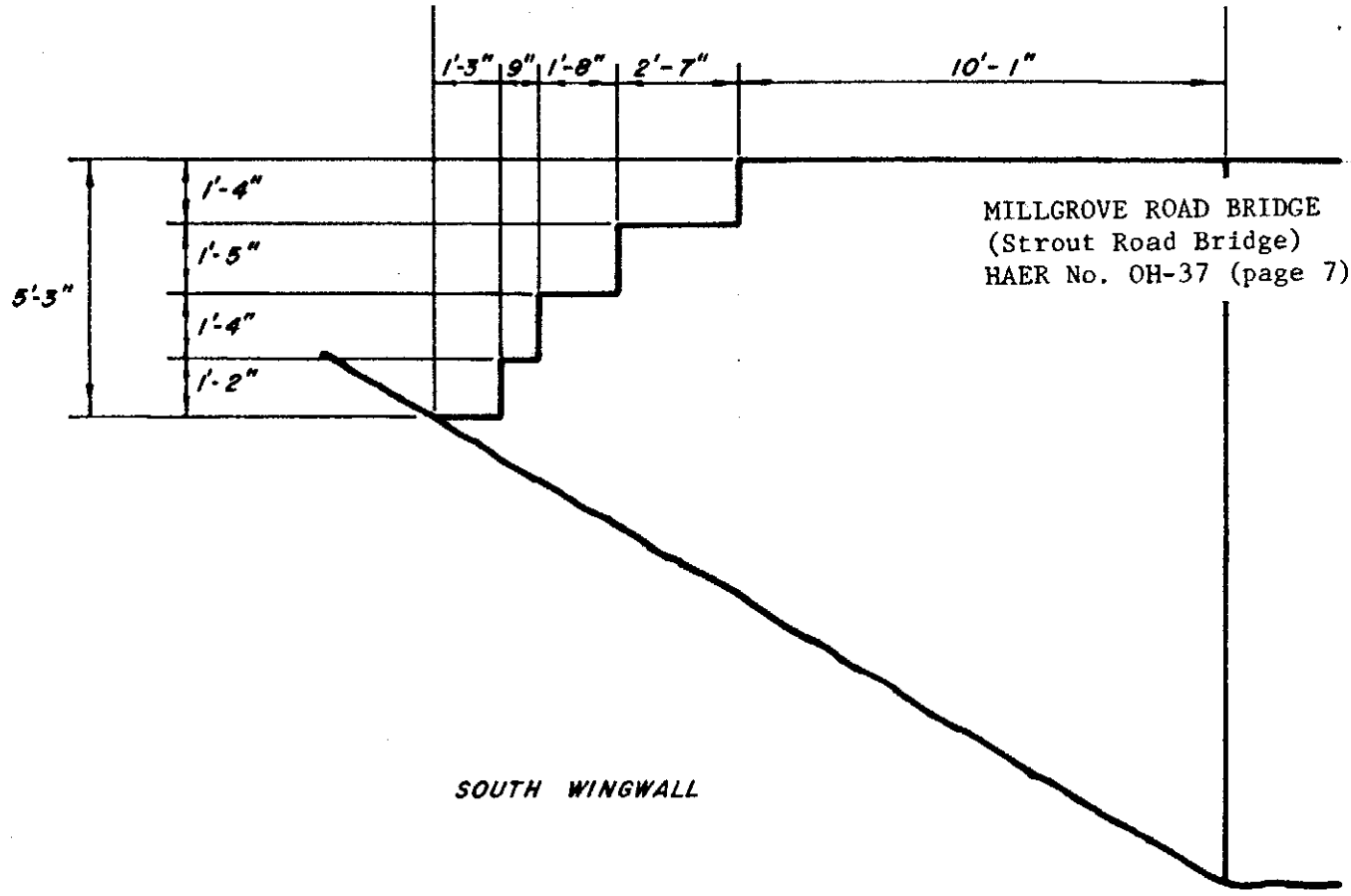
[7] Warren County Commissioner's Journal, Volume 44, Page 474.

[8] Interview with Harry S. Miars, Champion Bridge Company, Inc., Wilmington, Ohio 45177.

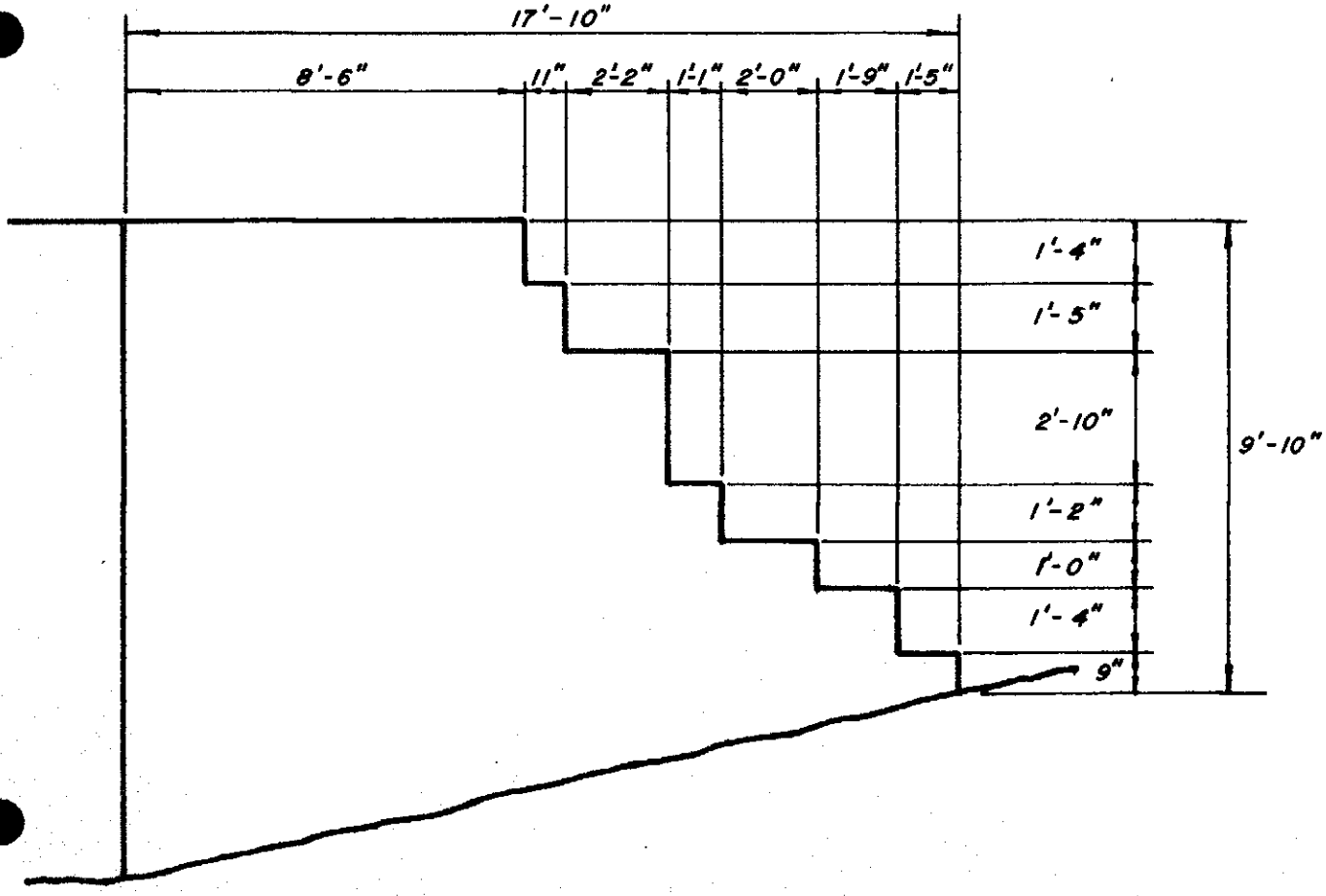

WEST ABUTMENT
Bridge Seat = 100.31
86.3
102.05
Sta. 1+19.75
Top Of Asphalt
Top Of Deck
1.67'
Bridge Seat = 100.20
85.3

MILLGROVE ROAD BRIDGE
(Strout Road Bridge)
HAER No. OH-37 (page 6)



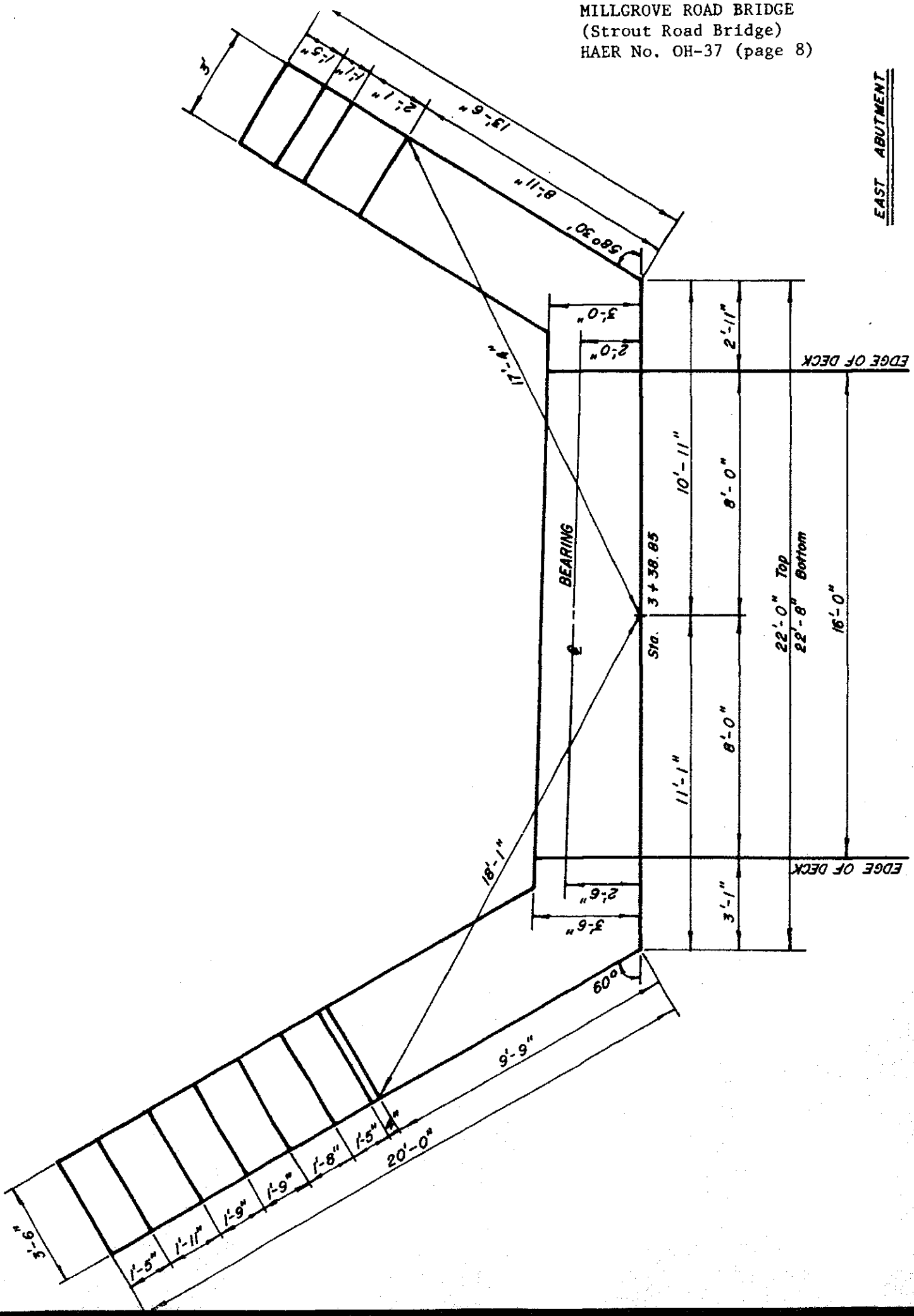


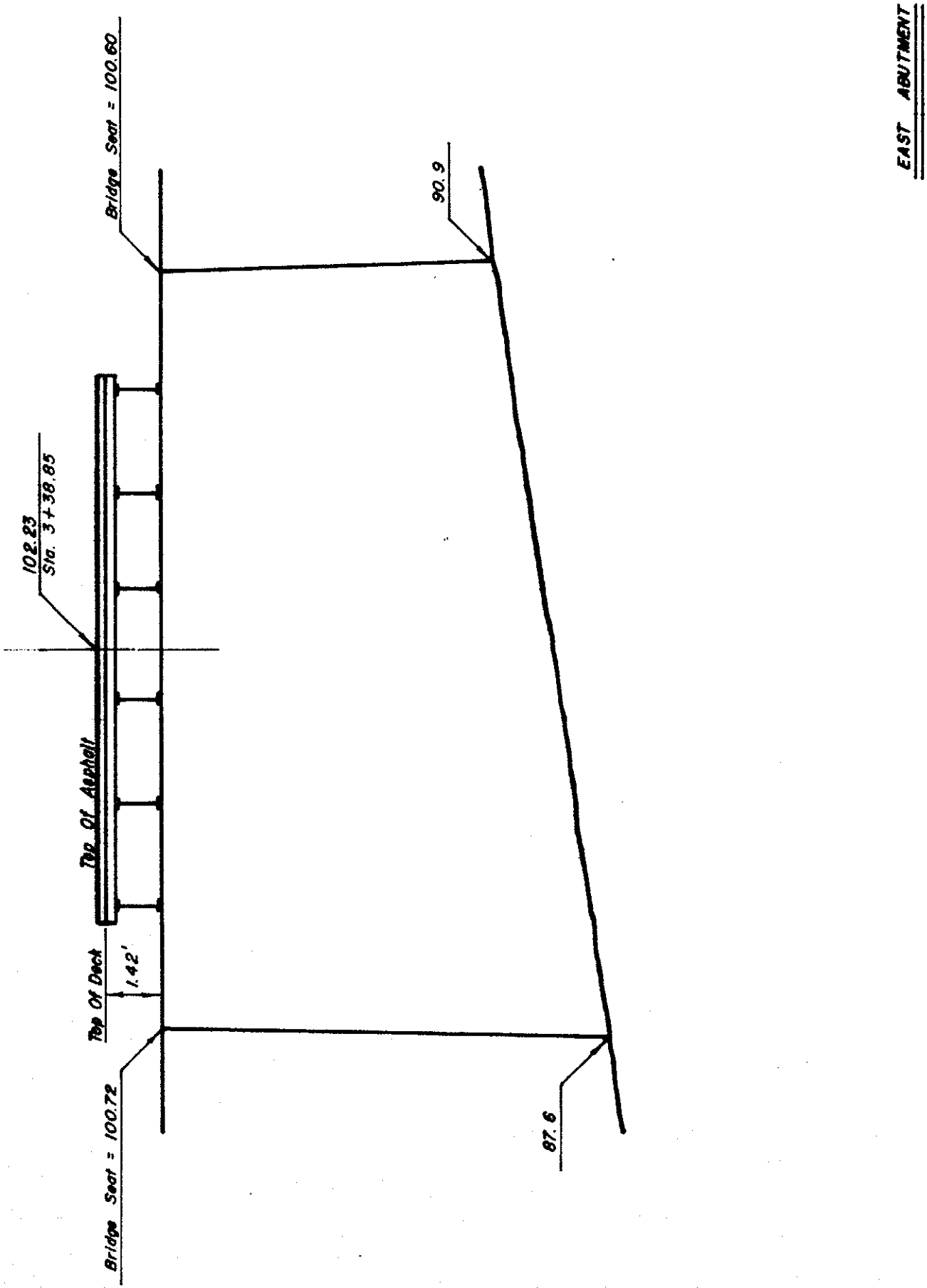
SOUTH WINGWALL

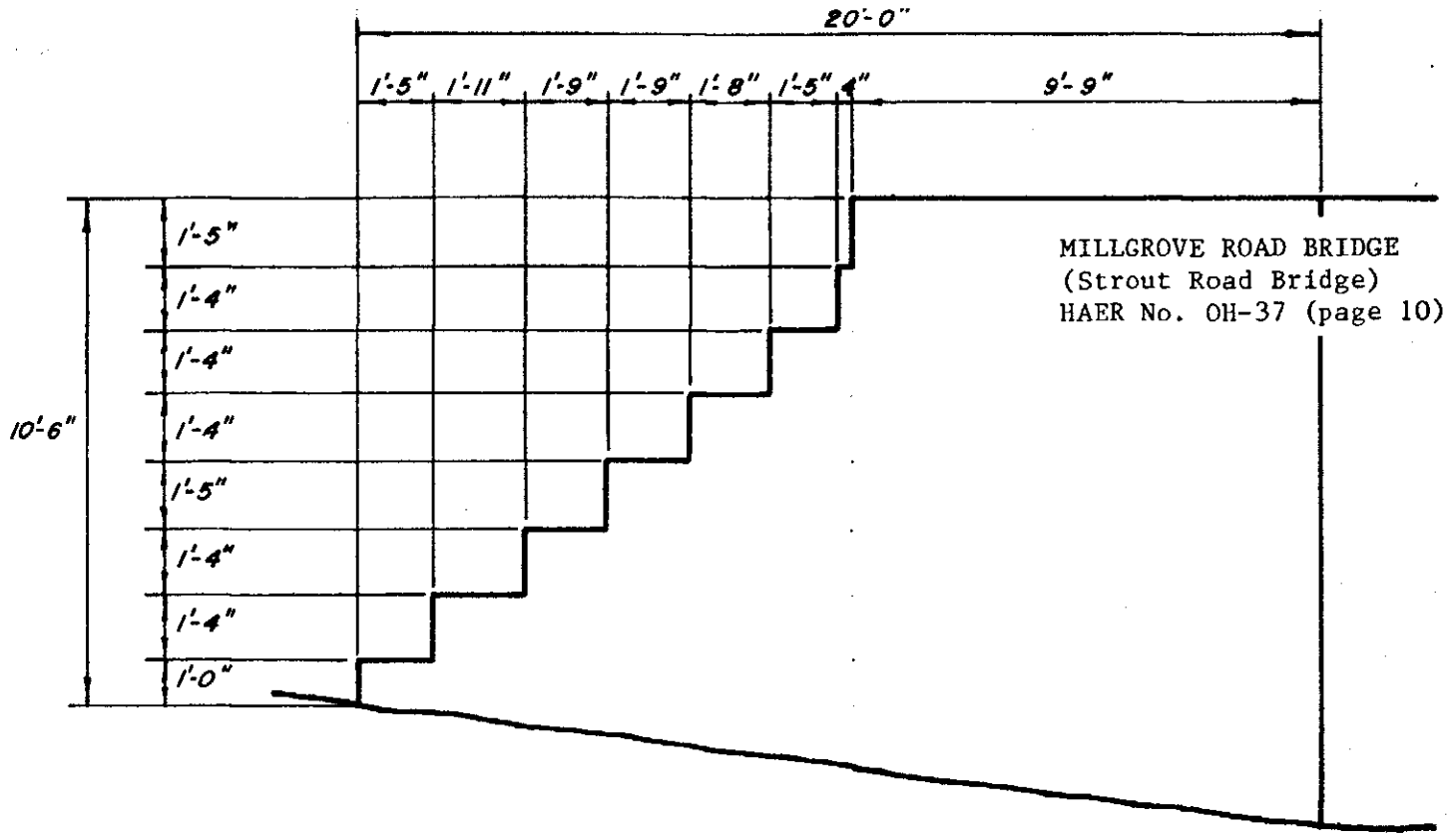


NORTH WINGWALL

WEST ABUTMENT

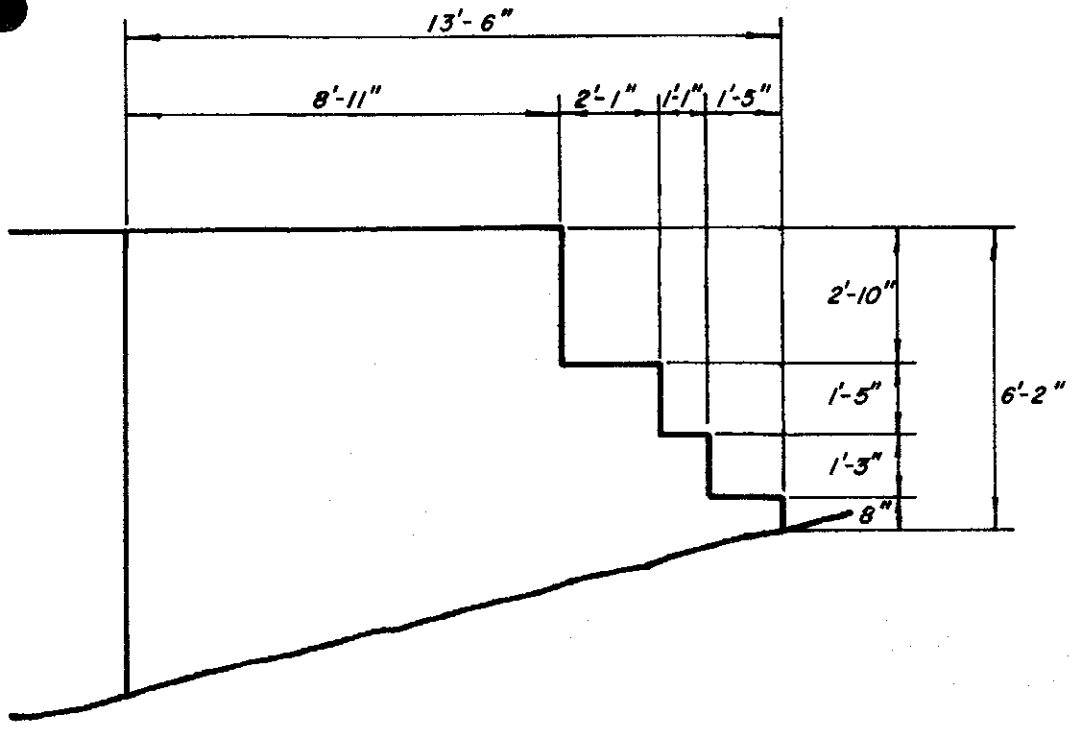

EAST ABUTMENT
3'-6"
1'-3"
1'-1"
2'-1"
13'-6"
8'-11"
58°30'
3'-0"
2'-0"
17'-4"
2'-11"
EDGE OF DECK
BEARING
℄
Sta. 3+38.85
10'-11"
8'-0"
22'-0" Top
22'-8" Bottom
16'-0"
11'-1"
8'-0"
18'-1"
2'-6"
3'-6"
3'-1"
EDGE OF DECK
60°
9'-9"
20'-0"
1'-5"
1'-11"
1'-9"
1'-9"
1'-8"
1'-5"
4"
3'-6"


EAST ABUTMENT
Bridge Seat = 100.60
90.9
102.23
Sta. 3+38.85
Top Of Asphalt
Top Of Deck
1.42'
Bridge Seat = 100.72
87.6



MILLGROVE ROAD BRIDGE
(Strout Road Bridge)
HAER No. OH-37 (page 10)

NORTH WINGWALL



SOUTH WINGWALL

EAST ABUTMENT